

PERSONAL TBC-II[®]

Software Manual Vers 2.0

AMIGA[®] Version

Release Version 2.0

Second Edition: January, 1992



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Chapter One: TBC-II Control Software

Introduction

This document describes the new Personal TBC-II Version 2.0 control software. The list below summarizes the new features supported by this software:

Integrated TBC-II and DPS Personal V-SCOPE control.

On screen gadgets for toggling between the TBC-II and Video Toaster® switcher screens.

ARexx command support.

Slider increment/decrement gadgets.

Direct proc. amp. value entry.

Keyboard controllable sliders for simplified genlock adjustment.

Re-namable TBC select gadgets.

Reduced chip memory usage.

Improved serial port sharing.

Installation

From the workbench screen on the AMIGA.

1. Insert the supplied micro-floppy DPS Personal TBC-II disk in df0: on the AMIGA.
2. When the ICON appears for the TBC-II disk, double click on it to open the TBC-II disk.
3. Double click on the Install icon, and follow the instructions provided.

Using an expansion serial card

In order to use the TBC-II software to control your TBC's, you must connect at least of your TBC's directly to the AMIGA serial port (see chapter 3 in the TBC-II manual). If this serial port on your AMIGA mother board is not available you may have to use an expansion serial card to run the TBC-II software. See Appendix A for details. Note that in many cases, the TBC-II can share the serial port with another application, so long as both applications are not running at the same time.

Running the TBC-II Software

To run the TBC-II program, simply double click the TBC-II icon from the AMIGA workbench screen. Note that the install program automatically places the TBC-II icon in the same drawer as your Video Toaster (if you are using one), otherwise, the software is normally installed to a drawer labelled DPS.

Using the TBC-II Software with a Video Toaster

If you are using the TBC-II software with a Video Toaster, then you will normally use the 'Switcher' gadget on the TBC-II screen, and the 'DPS' gadget on the Video Toaster switcher screen to toggle between programs (as described below). To use this feature, you MUST install your Video Toaster software for NON-Autobooting so that the AMIGA workbench screen appears when you boot your AMIGA. After you boot your AMIGA, you should start your Video Toaster software by double clicking it's icon. When the Video Toaster finishes initializing, you should see the normal Video Toaster switcher screen. You then type <Ctrl> <Ctrl> <Alt> <Alt>, this is a four key sequence, you hit the Ctrl key twice, then the Alt key twice. Remember this key sequence, as it may be used at any time to quickly toggle between the Video Toaster switcher screen, and the normal AMIGA workbench screen. When the workbench screen appears, double click on the Personal TBC-II icon to start the TBC-II software. At this point you will see the TBC-II main control screen. When you want to return to the Video Toaster switcher screen, click on the 'Switcher' gadget on the TBC-II screen. When the Video Toaster screen re-appears, it will contain a small gadget labeled 'DPS' located close to the Toaster slice gadgets. When the click on the 'DPS' gadget, the TBC-II program screen will appear.

Note: Certain operations you perform on the Video Toaster may cause the 'DPS' gadget to disappear. When this happens, don't worry, the gadget is still active, so that if you click the mouse in the area where the gadget normally appears, the TBC-II screen will become active. Also, you can always use the <Ctrl> <Ctrl> <Alt> <Alt> key sequence to get to the workbench, and then double click the TBC-II icon to reactivate the TBC-II screen.

TBC-II Video Proc. Amp. Controls

Figure 1-1 shows the area of the TBC-II control screen which has the video proc. amp. controls, and TBC select gadgets. This is the area of the TBC-II screen which is most often used, as it allows you to manipulate the various video signal levels to obtain optimum picture quality.

1 - Video Level Control

This control is used to change the overall amplitude of the video signal. This results in a change in the contrast of the displayed picture. If you are using the DPS Personal V-SCOPE, then this control should be used to adjust the peak video amplitude to 100 IRE.

2 - Black Level Control

This control is used to change the DC (or pedestal) level of the active video portion of the signal. This results in a change in the brightness of the displayed picture. If you are using the DPS Personal V-SCOPE, then this control should be used to adjust the black level of the video signal to 7.5 IRE.

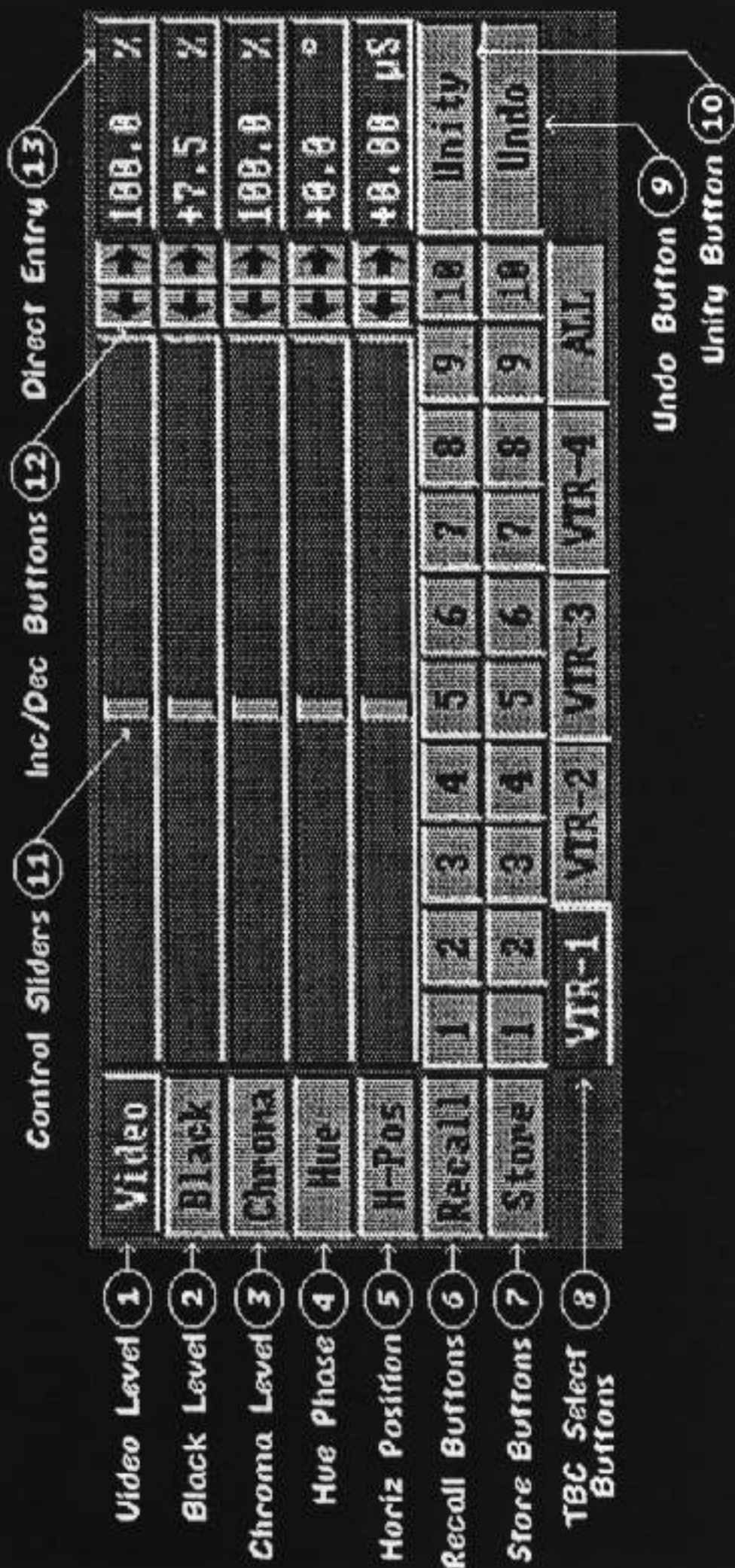
3 - Chroma Level Control

This control is used to change the chrominance amplitude (or saturation) of the video signal. This results in a change in the amount of color in the displayed picture. If you are using the DPS Personal V-SCOPE, then this control should be used, in conjunction with the hue control, to position the color bar vectors in the vector scope graticule targets.

4 - Hue Phase Control

This control is used to change to chrominance phase. This results in a change in the color hue of the displayed picture. If you are using the DPS Personal V-SCOPE, then this control should be used, in conjunction with the chroma level control, to position the color bar vectors in the vector scope graticule targets.

Figure 1-1 TBC-II Video Proc. Amp. Controls



5 - Horizontal Position Control

This control allows you to change the horizontal position of the processed video signal. It should not be confused with the genlock timing adjustment controls. This control moves the active video portion of the signal only, leaving all genlock timing unaffected. It is used in certain editing situations when the exact position of two signals being edited is important.

6 - Proc. Amp. Recall Buttons

The recall buttons labelled 1-10 are used to recall proc. amp. settings previously saved using one of the store buttons. When one of the recall buttons is selected, the video level, black level, chroma level, hue phase, horizontal position, and the red and blue color balance are all instantly updated to reflect the setting of the selected recall button. The store and recall features are used to keep copies of proc. amp. settings that are associated with a particular scene or video tape that will be needed later. Note that these settings are stored in the 's:TBC.Defaults' file when the TBC-II program is exited.

7 - Proc. Amp. Store Buttons

The Store buttons are used to save proc. amp. settings. When proc. amp. settings are saved in a particular location, a small 'tick' mark will appear just before the number in the store box. This indicates that the location holds a set of non-unity proc. amp. settings. To erase settings from a location, click on the unity gadget, to force all proc. amp. settings to unity, and then store those settings to the location you want to clear.

8 - TBC Select Buttons

The TBC select buttons are used to select which TBC you are controlling. The TBC-II software can control up to four TBC's at once. Each TBC card has a unique address which is determined by on card DIP switch settings (see chapter 2 of the TBC-II manual). When the 'ALL' gadget is selected, then any adjustments made, will be sent to all installed TBC cards.

Renaming the TBC Select Buttons

When the TBC-II program is first run, the TBC select gadgets are labelled VTR-1, VTR-2, VTR-3, and VTR-4. If you want to change any of these names, then use the following procedure:

- 1) Exit the TBC-II program so that the AMIGA workbench screen is showing.
- 2) Locate the TBC-II icon on the workbench screen. Click on the icon so that it becomes highlighted.
- 3) Press and hold the right mouse button and drag down the workbench menu, and select the 'info' item.
- 4) At the tool types area of the info screen, use the scroll gadget to select the 'TBC1=' tool type. Edit this entry to contain the name you desire.
- 5) At the bottom of the info screen select the 'SAVE' item.

9 - The Undo Button

When the Undo button is selected, the last change to any proc. amp. setting will be cancelled, and the settings will revert to those present before that change.

10 - The Unity Button

When the unity button is selected, all of the proc. amp. settings will be returned to their unity positions. The controls effected are video level, black level, chroma level, hue phase, horizontal position, and the red and blue color balance. The unity button DOSE NOT effect the genlock timing settings.

11 - Control Sliders

The control sliders are used to change proc. amp. settings. The sliders are normally moved by dragging them with the mouse. They may also be moved by clicking in front of or behind them.

12 - Increment/Decrement Buttons

The increment/decrement gadgets may also be used to move any of the control sliders. If one of these gadgets is held down, then the associated slider will move continuously.

13 - Direct Entry Gadgets

The direct entry gadgets normally provide a numerical read out of the current slider position for each of the associated controls. If you click the mouse inside of any of the direct entry string gadgets, then you may use the keyboard to enter a new value for that control.

Genlock Timing Controls

Figure 1-2 below shows the genlock timing control area of the TBC-II software screen. The genlock timing controls are used to position the TBC output with respect to its reference video input. This function allows the outputs of multiple TBC's to be positioned exactly in time, compensating for cable lengths and other delays, so that video editing operations, such as the mixing of two video signals, can be performed. Chapter two of this manual provides a detailed description for correctly adjusting these genlock controls.

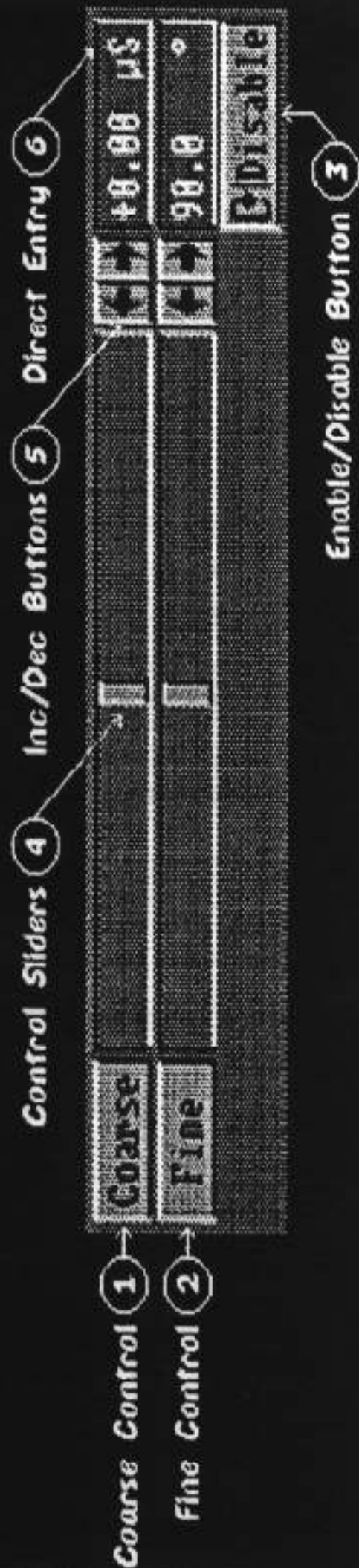
1 - Genlock Coarse Control

The genlock coarse control is used to change the genlock timing in large steps. When this control is adjusted, the output video moves in steps of 270 nsec., which is equal to one cycle of the color subcarrier frequency. Because of this, the control will move the displayed video horizontally but will not effect the hue, or chrominance phase, of the picture.

2 - Genlock Fine Control

The genlock fine control is used to change the genlock timing in small steps. Each increment of this control changes the output video timing by 0.55 nsec. When using this control, if you get to the end of its range, say for instance at the maximum right hand travel, then use the increment button and the control will 'jump' to the extreme left hand side, while the coarse control will be automatically updated.

Figure 1-2 TBC-II Genlock Timing Controls



3 - Enable/Disable Button

The genlock timing enable/disable cycle gadget is used to enable or disable the genlock control sliders. The default setting for this gadget is disabled, because the genlock timing controls are normally used only when a system is being initially set-up. This prevents accidental changes to the genlock timing controls.

4 - Control Sliders

The control sliders are used to change genlock timing settings. The sliders are normally moved by dragging them with the mouse. They may also be moved by clicking in front of or behind them.

5 - Increment/Decrement Buttons

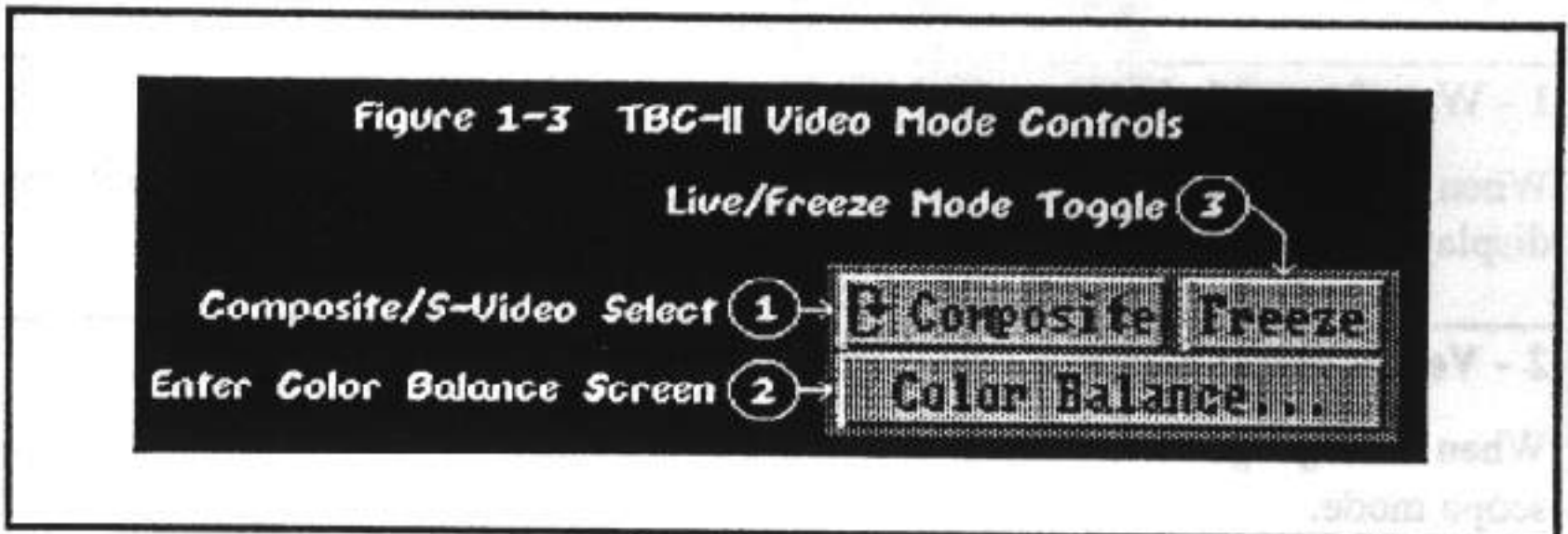
The increment/decrement gadgets may also be used to move the genlock control sliders. If one of these gadgets is held down, then the associated slider will move continuously.

6 - Direct Entry Gadgets

The direct entry gadgets normally provide a numerical read out of the current slider position for each of the associated controls. If you click the mouse inside of any of the direct entry string gadgets, then you may use the keyboard to enter a new value for that control.

Video Mode Controls

Figure 1-3 shows the video mode control area of the TBC-II software screen.



1 - Composite Video/S-Video Select

This control is used to select the appropriate input mode for each TBC. The composite mode causes the TBC to process the video input signal connected to its composite video (or NTSC) input BNC. The S-Video mode causes the TBC to process the video input signal connected to its S-Video (or S-VHS) input connector. If you are using the TBC with a playback VTR that has an S-Video output (S-VHS or Hi8 type machines) then better picture quality will be obtained by using the S-Video mode on the TBC.

2 - Color Balance Screen

When this control is selected, the TBC-II color balance screen will be displayed. This screen is used to perform color balance correction to the processed video signal. This feature is used mainly to correct for footage shot with an incorrect white balance. If the white areas of a particular tape or scene do not appear white, then use this control to correct them. This control may also be used to add a 'color wash' to a scene.

3 - Live/Freeze Mode Toggle

This control toggles the TBC between freeze and live modes. When in the freeze mode, the TBC displays a single field of video. Note: This freeze will shift horizontally when engaged, it is intended for off-line work only, such as locating edit points, ect.

V-SCOPE Control Panel

Figure 1-4 shows the V-SCOPE control area of the TBC-II software screen. To use these controls, you must have a DPS Personal V-SCOPE. The V-SCOPE allows you to superimpose waveform monitor and vector scope displays on a processed video signal.

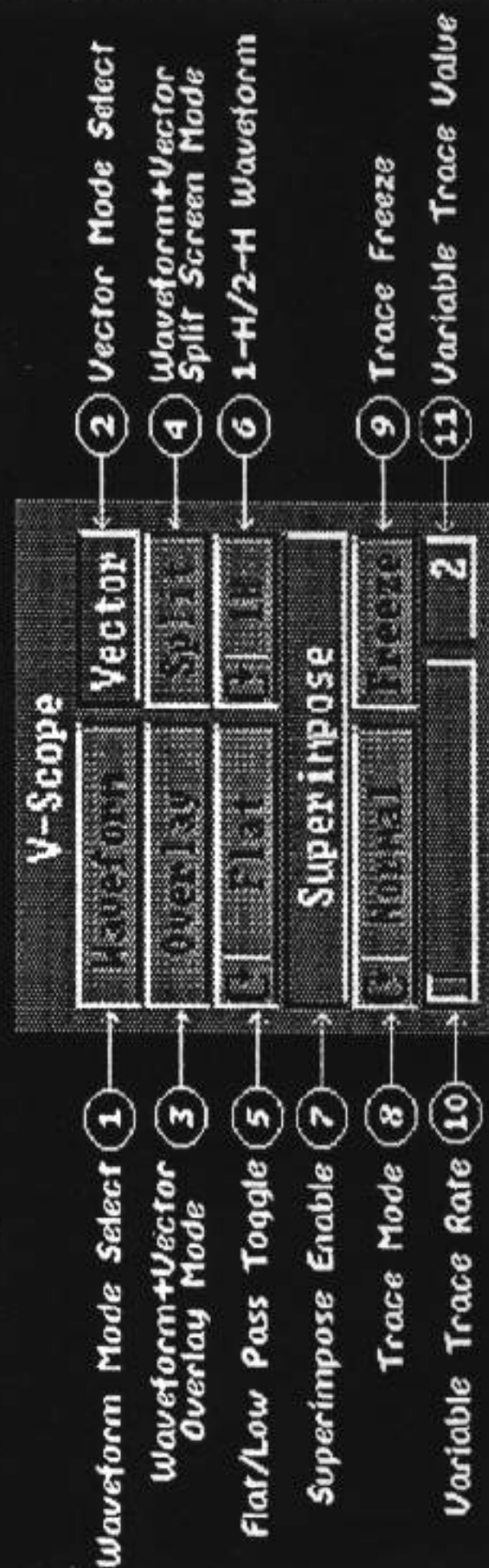
1 - Waveform Mode Select Gadget

When this gadget is selected, the V-SCOPE is placed in full screen waveform display mode.

2 - Vector Mode Select Gadget

When this gadget is selected, the V-SCOPE is placed in full screen vector scope mode.

Figure 1-4 TBC-II V-SCOPE Control Panel



3 - Waveform+ Vector Overlay Gadget

When this gadget is selected, the V-SCOPE is placed in full screen waveform + vector scope overlay mode. This produces a display with both full screen waveform monitor and full screen vector scope simultaneously displayed.

4 - Waveform+ Vector Split Screen Gadget

When this gadget is selected, the V-SCOPE is placed in waveform + vector scope split screen mode. This produces a display in which the top half of the screen shows live video, and the bottom half of the screen consists of a quarter sized waveform monitor display, and a quarter sized vector scope display placed side by side.

5 - Flat/Low Pass Cycle Gadget

This gadget cycles the V-SCOPE waveform monitor between flat and low pass frequency response modes. The low pass mode is normally used when setting white or black levels while viewing the V-SCOPE waveform monitor display. This mode eliminates most of the chrominance and high frequency noise which allows for more accurate settings.

6 - 1-H/2-H Waveform Cycle Gadget

This gadget cycles the V-SCOPE waveform monitor between 1-H (single video line) and 2-H (dual video line) display modes. Note: The 2-H mode is not allowed when the V-SCOPE is in split screen mode. Normally, the 1-H mode is used, as this provides the best display resolution. The 2-H mode is used when it is desirable to view the horizontal blanking interval of the video signal.

7 - Superimpose Enable Gadget

When this gadget is selected, the superimpose output from the V-SCOPE card will be enabled, and will contain the synthesized waveform/vector display as determined by the other gadgets. When this gadget is de-selected, the superimpose output will contain a copy of the V-SCOPE video input signal.

8 - Trace Mode Cycle gadget

The trace mode cycle gadget determines the trace mode for the V-SCOPE synthesized beam. When **Normal** is selected, the V-SCOPE display is updated every two frames, with old data being erased. When **Peak Hold** is selected, the old data is NOT erased, and a cumulative display results, which will show all peak video excursions. When **Variable** is selected, the display update rate may be changed by moving the variable trace rate slider. Increasing the rate will produce a display which is more fully 'colored in'. This can improve the readability in certain modes (such as waveform+vector overlay, with 2-H selected).

9 - Trace Freeze Gadget

This gadget freezes the V-SCOPE trace, providing an instantaneous 'snap shot' of the current waveform/vectors being displayed.

10 - Variable Trace Rate Slider

This slider is used set the variable trace update rate whenever the trace mode cycle gadget is in the variable setting.

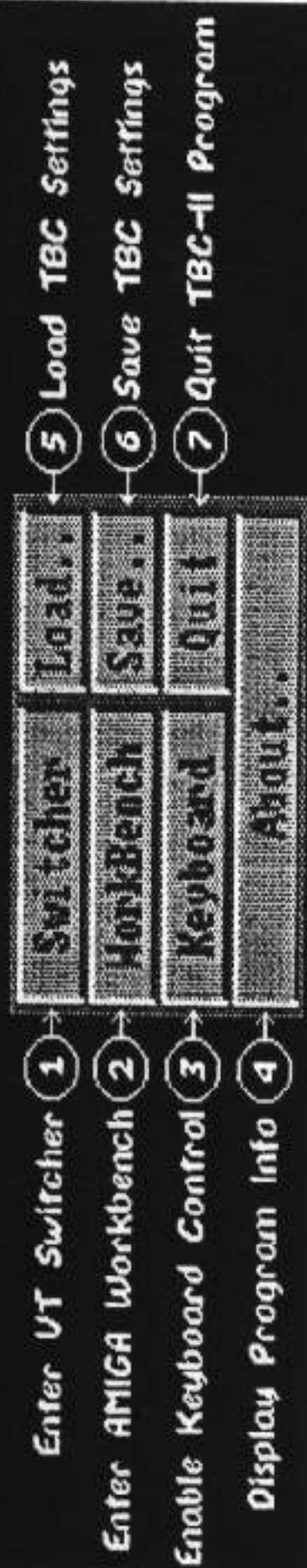
11 - Variable Trace Value

This gadget provides a numerical read out (the actual trace update rate in frames) of the variable trace rate selected by the variable trace rate slider.

TBC-II File Controls

Figure 1-5 shows the TBC-II file controls. The TBC-II file controls are used to save settings to a disk file for subsequent use. On the AMIGA, the default file used for saving the TBC settings is 's:TBC.Defaults'. When the TBC-II program is started, this file is read, and all TBC's are automatically updated to reflect this file. The format of this file is consistent with the ARexx command interface supported by the TBC-II program (as described in Appendix B of this document).

Figure 1-5 TBC-II File Controls



1 - Enter Video Toaster Switcher

The enter Video Toaster switcher gadget is used to go directly from the TBC-II screen to the Video toaster switcher screen. To use this gadget, the Video Toaster software must be loaded into memory. When this gadget is selected, and the Video Toaster screen appears, a small button labeled 'DPS' will appear next to the Video Toaster slice buttons. Use this button to go from the Switcher screen back to the TBC-II screen. If you do not have a video toaster or the video toaster software is not loaded, then this gadget will perform no function.

2 - Enter AMIGA® Workbench

The enter AMIGA workbench gadget is used to go directly from the TBC-II screen to the AMIGA workbench screen. Use this gadget to access the AMIGA workbench screen while the TBC-II program is running. You can return to the TBC-II program by double clicking it's icon on the workbench screen. If you use this gadget to access the AMIGA workbench screen while the Video Toaster is loaded, and want to return to the Video Toaster without first returning to the TBC-II screen, then use the <Ctrl> <Ctrl> <Alt> <Alt> key sequence described earlier.

3 - Enable Keyboard Control

The enable keyboard control gadget is used to allow keyboard control of the TBC-II sliders. This feature is most useful for controlling the genlock sliders while the screen is displayed (see chapter 2). To use this feature, click the mouse on this gadget to enable keyboard control. Next, select the slider that you want to control by clicking on it's name on the TBC-II screen. Then, depress the 'Caps Lock' key on the AMIGA® keyboard so that it is in effect. Now you can use the arrow keys on the AMIGA keyboard to control the slider you have selected. Also, if you push the 'Shift' key before holding one of the arrow keys, then the rate of change of the selected slider will be increased. Note that the keyboard control will remain in effect even when the TBC-II screen is not being displayed.

4 - Display Program Info

When this gadget is selected, information about the TBC-II program you are using will be displayed.

5 - Load TBC Settings

This gadget is used to load TBC settings from a disk file. When a file is selected, all TBC settings will be updated. The default file on the AMIGA is 's:TBC.Defaults'. Note that this file is automatically read when the TBC-II software is started.

6 - Save TBC Settings

This gadget is used to save TBC settings to a disk file. When a file is selected, all TBC settings will be saved. The default file on the AMIGA is 's:TBC.Defaults'.

7 - Quit TBC-II Program

This gadget is used to exit the TBC-II program and remove it from memory. If you have changed some of the TBC settings, then you will be presented with the option of saving the current settings to a disk file.

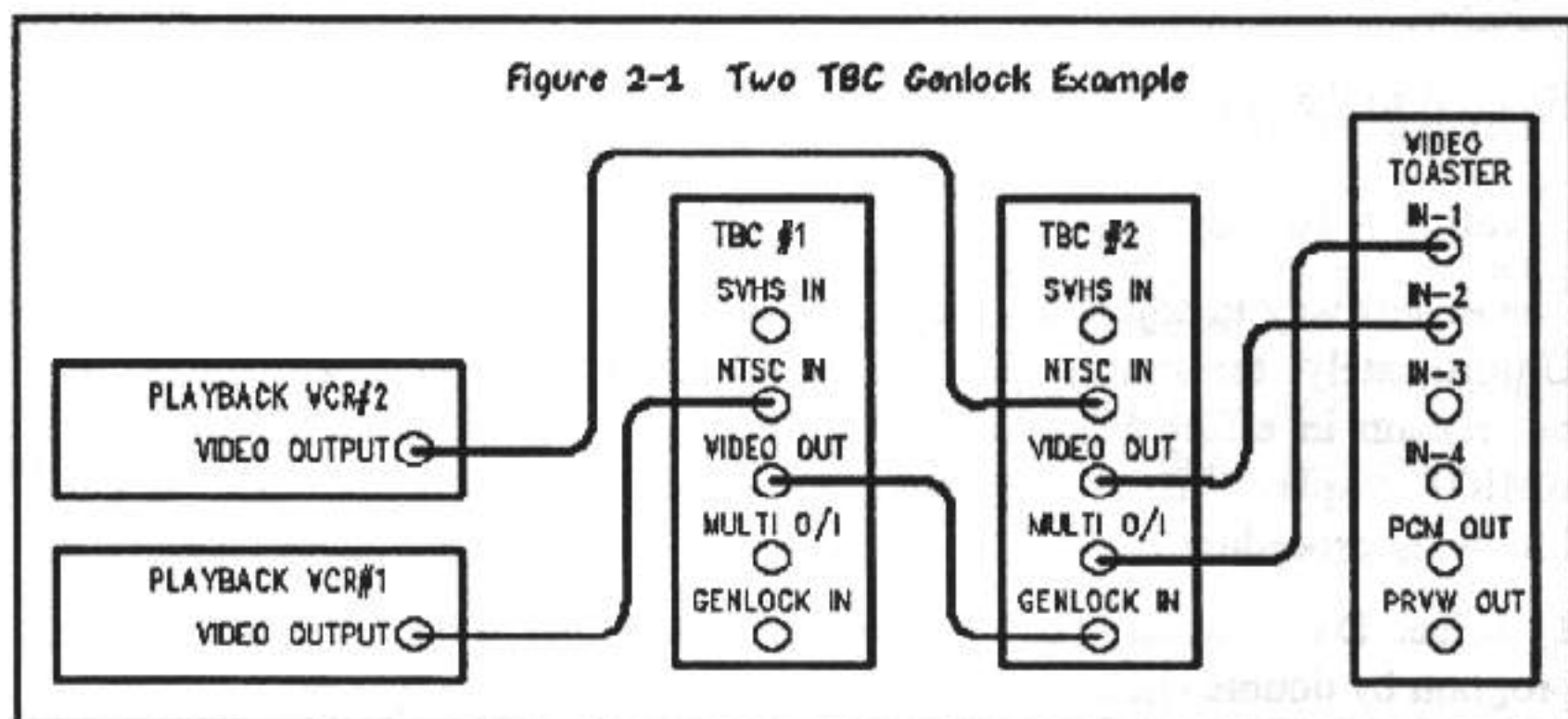
Chapter Two: Genlock Timing Adjustment

Introduction

The genlock timing adjustment is used to position the output video from the TBC card so as to co-time it with some other video signal. When the TBC-II is used with a Video Toaster, all four inputs to the Toaster must be exactly co-timed. Actually, the Video Toaster derives all of its internal timing from which ever signal is connected to input #1. Therefore, all other inputs must be exactly co-timed with this signal. The interfacing examples in the TBC-II user's manual show how to obtain this. Note that each TBC in your system that IS NOT connected the Video Toaster input #1 will have to have its genlock timing adjusted when the system is initially configured.

Two TBC Genlock Example

Figure 2-1 below shows an example setup with two TBC's connected to a Video Toaster. In this case, TBC #2 in the figure must have its genlock timing adjusted so that the video signals entering the Toaster on IN-1 and IN-2 are exactly co-timed.



To perform this adjustment, use the following procedure.

- 1) Start your Video Toaster as you normally would.
- 2) When the Toaster finishes initializing, select DV2 on the program bus. This should produce a color bar test signal on your program monitor.

- 3) Exit the Toaster using the <Ctrl> <Ctrl> <Alt> <Alt> four key sequence.
- 4) Run the TBC-II program by double clicking its icon.
- 5) When the TBC-II screen appears, select 'ALL' on the TBC select buttons, then select Unity, and then select Composite on the TBC input select cycle gadget. (Note: You MUST cycle the input select from S-Video to Composite)
- 6) Temporarily connect to Toaster program output to the TBC #1 NTSC input.
- 7) On the TBC-II screen, select VTR-1, and then Select Freeze.
- 8) Now connect the Toaster program output to the TBC #2 NTSC input.
- 9) On the TBC-II screen, select VTR-2, and then Select Freeze.
- 10) Reconnect the Toaster program output to your program video monitor.
- 11) Return to the Toaster switcher screen by clicking the 'Switcher' gadget on the TBC-II screen.
- 12) Verify that both of the toaster inputs (1 and 2 in this example) contain a frozen color bar image (colors may be wrong at this point) by selecting input 1 and then input 2 on the program bus while viewing your program video monitor.

Proceed to the next section to create a special keyed split screen.

Creating A Keyed Split Screen

The easiest way to adjust the genlock timing is to use the split screen method. Unfortunately, the simple split screens produced by the toaster switcher will not remain in effect when you bring the TBC-II software screen up on the AMIGA display. To create a split screen that will remain in effect, use the following procedure:

- 1) Select DV1 on the Toaster program buss, then enter the Toaster paint program by double clicking its icon on the toaster switcher screen.
- 2) Color in the top half (you don't have to be exact) of the screen white. (Draw a large white square, and then use the area fill feature).
- 3) Click on the TAKE gadget to render the painted image to the Toaster framestore (you should see it appear on your program monitor).
- 4) Pull down the Project menu, and select the Switcher option to return to the switcher screen.

- 5) Select effects bank 'D' on the switcher screen. And then select the Art Card effect (its icon looks like a KEY-HOLE).
- 6) Select DV1 on the preview bus, '2' on the program bus, and '1' on the overlay bus.
- 7) Drag the mouse on the number box just above the 'scissor' icon and set the luminance key level to 128.
- 8) At this point your program monitor should be displaying a split screen, with the TBC #2 output on the top, and the TBC #1 output on the bottom.
- 9) Click on the 'DPS' gadget to return to the TBC-II program. (Note, the 'DPS' gadget may be invisible at this point, but it will still be active. Click the mouse just to the right of the Toaster 3D slice.)
- 10) When the TBC-II screen appears, select VTR-2 and Enable the genlock timing adjustment by clicking on the Genlock timing Enable/Disable cycle gadget.
- 11) Use the genlock Fine slider while viewing the split screen. Move the slider so as to obtain the best possible color match. Note that if you reach the end of the slider range, say for instance at the maximum right hand travel, then click on the increment button, and the slider will jump to the other end, while the coarse slider is automatically updated.
- 12) When you get the best possible color match, use the coarse slider to obtain the best possible position match.
- 13) Reconnect each of the TBC's to their playback VTR's. Then, for each TBC, select the appropriate input mode (Composite or S-Video).
- 14) Select the 'Save' gadget to save these settings so that each time the TBC-II program starts, it will automatically reload the TBC's with this information.

Appendix A: Using an Expansion Serial Board

The control software for the Personal TBC-II requires that the TBC-II be connected to a serial port on the AMIGA. This is normally the built in serial port on the AMIGA mother board. If the serial port on your AMIGA is already in use then it may be necessary to use an expansion serial board such as the Commodore A2232 (or equivalent) multi-serial card. Note that in most cases the built in serial port may be shared between other tasks and TBC-II control. This is because the TBC-II uses a 'listen only' type of serial interface which allows the TBC-II internal serial connection to be maintained, even while some other task, such as a serial print or modem, is connected to the external DB-25 connector on the AMIGA. In cases where the built in AMIGA port cannot be shared, it will be necessary to interface to the TBC-II using an expansion serial card. The following instructions are provided to assist you in using such a device.

Commodore® A2232 Serial Card

To use the commodore A2232 card to control the TBC-II perform the following steps:

- 1) Install the A2232 card in your computer as detailed in the instructions accompanying the card.
- 2) Run the A2232 install program provide with the A2232 board.
- 3) Locate the Personal TBC-II icon on your workbench screen. Click on the icon so that it becomes highlighted. The push and hold the right mouse button and drag down the workbench menu, and select the info item.
- 4) At the tool types area of the info screen, use the scroll gadget to select the 'UNIT=' tool type. Edit this entry to select the unit number associated with the serial port on the A2232 card you want to use (refer to the A2232 documentation).
- 5) Use the scroll gadget to select the 'BAUD=' tool type. Edit this entry to 9600 (Note: the A2232 does not support the default 31.25 KBPS rate used by the TBC-II card).
- 6) Select the Save item on the info screen.
- 7) On the TBC-II card, put DIP Switch 2 in the down position to select 9600 BPS operation (see figure 2-1).

ASDG® Dual Port Serial Board

To use the ASDG Dual port serial board to control the TBC-II perform the following steps:

- 1) Install the ASDG card in your computer as detailed in the instructions accompanying the card.
- 2) Run the ASDG install program provide with the board.
- 3) Locate the Personal TBC-II icon on your workbench screen. Click on the icon so that it becomes highlighted. Then push and hold the right mouse button and drag down the workbench menu, and select the 'info' item.
- 4) At the tool types area of the info screen, use the scroll gadget to select the 'DEVICE=' tool type. Edit this entry to 'DEVICE=siosbx.device'. Note: this entry is case sensitive so be sure to entry the device name in lower case.
- 5) Use the scroll gadget to select the 'UNIT=' tool type. Edit this entry to select the unit number associated with the serial port on the ASDG card you want to use (refer to the ASDG documentation).
- 6) Select the Save item on the info screen.

Appendix B: TBC-II ARexx Commands

The Personal TBC-II can be controlled using ARexx commands. When the TBC-II program is running, a public message port is opened which responds to ARexx messages in the function call format. The address of this message port is TBC. The command format is as described by the table below:

Address: TBC

Command summary:

<u>Command</u>	<u>Argument(s)</u>	<u>Result</u>
TBC	[1-4 MASTER ALL]	[1-4 ALL]
UNITY	<no args>	
INPUT	[COMPOSITE SVIDEO]	[COMPOSITE SVIDEO]
FREEZE	[ON OFF]	[ON OFF]
VIDEO	70.0 to 130.0	70.0 to 130.0
BLACK	-22.5 to +37.3	-22.5 to +37.3
CHROMA	50.0 to 150.0	50.0 to 150.0
HUE	-45.0 to +45.0	-45.0 to +45.0
HORIZONTAL	-1.00 to +1.00	-1.00 to +1.00
COARSE	-4.47 to +4.33	-4.47 to +4.33
FINE	0.0 to 180.0	0.0 to 180.0
BLUE	-40.0 to +40.0	-40.0 to +40.0
RED	-40.0 to +40.0	-40.0 to +40.0
RECALL	1 to 10	
STORE	1 to 10	
UNDO	<no args>	
QUIT	<no args>	
LOAD	<name> (will be "S:TBC.Defaults" if no name given)	
SAVE	<name> (will be "S:TBC.Defaults" if no name given)	
ANALYZER	[VECTOR WAVE OVERLAY SPLIT] [1H 2H] <<- returns same	
EXCITER	[NORMAL FREEZE PEAK VARIABLE] <<- returns same	
SUPERIMPOSE	[ON OFF]	[ON OFF]
RESPONSE	[FLAT LOWPASS]	[FLAT LOWPASS]
RATE	[2 to 127]	2 to 127
VERSION	<no args>	[PersonalTBC-II Vx.x]
KEYINPUT	[ON OFF]	[ON OFF]
KEYMODE	[VIDEO BLACK CHROMA HUE HORIZ BLUE RED] <<-returns one	
PROCAMP	[1-10] [video black chroma hue horiz blue red] <<- returns same	

TOFRONT	<no args>	pops to front/closes switcher
TOBACK	<no args>	pops screen to back
TOSWITCHER	<no args>	opens switcher if it's running
TOPROCAMP	<no args>	switches to proc amp screen
TOBALANCE	<no args>	switches to balance screen
TOWB	<no args>	pops workbench to front

WAIT <numbers of frames>

SEND For test purposes only (sends 7 bytes of binary data)
 i.e. SEND 'F06700013030F7'x

Notes:

UNITY keyword can replace any numeric argument for individual reset

Commands can be shortened to 2 or 3 chars or lengthened to any size.
 Some commands require 3 due to name similarity.

(BLA/BLU,RED/REC/REQ)

Same with keyword args.

Commands do not require arguments. If no arg is given the status will be unchanged. (see below)

All commands return current status in RESULT. OPTIONS RESULTS must be set to receive these.

This excludes commands with which do not require arguments and do not need to return status.

All commands and arguments are case insensitive.

Numeric results may not return exactly as sent. This is due to scaling factors of the specific function.

Example:

OPTIONS RESULTS

Address TBC

TBC 1

Hue Unity - reset hue to unity

Say RESULT == > 0.0

Hue (-1.7) - set hue phase (ARexx needs parens for

Say RESULT == > -1.8 negatives as args)

Hue (-4.9)

Say RESULT == > -4.9

Hue - request current setting

Say RESULT == > -4.9